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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,657	05/04/2001	Harry M. Meade	GTC-21	9001

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EXAMINER	
HAMA, JOANNE	

ART UNIT	PAPER NUMBER
1632	

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/849,657	MEADE ET AL.	
	Examiner	Art Unit	
	Joanne Hama, Ph.D.	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10,14-19,25 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10,14-19,25 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant filed a response to the Non-Final Action of November 2, 2005 on February 28, 2006. Claims 1-9, 11-13, 20-24 are cancelled. Claims 16, 26 are amended.

Claims 10, 14-19, 25, 26 are under consideration.

Information Disclosure Statement

Applicant filed an IDS April 20, 2006. Applicant has corrected the citation of Meyer et al. and the correction has been acknowledged. With regard to the Hegenhart reference, Applicant indicates that paragraph 2, page 2 of the IDS filed May 23, 2005 has indicated that a copy of the Hegenhart reference could not be found. The Examiner acknowledges this statement. In the IDS filed on April 20, 2006, the Hegenhart reference is listed. However, the Examiner cannot consider the Hegenhart reference if no copy is available. As such, the Hegenhart reference is lined through and has not been considered. Until a copy of Hegenhart is obtained for consideration, citation of Hegenhart in an IDS will not meet the requirements of 37 CFR 1. 97 and 1.98.

Withdrawn Rejections

35 U.S.C. 103(a)

The rejection of claims 10, 14-19, 25, 26 as being obvious over Houdebine et al., in view of Krusius and Ruoslahti, Mann et al., and Roberts et al. is withdrawn in view of new grounds of rejection of the claims as set forth below. Applicant's arguments with

respect to claims 10, 14-19, 25, 26 have been considered but are moot in view of the withdrawal of this rejection.

New/Maintained Rejections

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 26 remains rejected in modified form under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for reasons of record, November 2, 2005. This is a new matter rejection.

Response to Arguments

Applicant's arguments filed February 28, 2006 have been fully considered but they are not persuasive.

Applicant indicates that claim 26 has been amended to clarify the meaning and breadth of the claim. Applicant indicates that there is a process of amplifying a DNA sequence to aid in the efficiency of producing a series of transgenic cells *in vitro*. Once a DNA has been incorporated into the genome of the somatic cells of a target species

the nuclei of those cells are used in nuclear transfer procedures (Applicant's response, pages 5-6). In response, the Examiner does not find the argument persuasive because claim 26 is still readable as administering bacteria or yeast to a transgenic non-human mammal, wherein the bacteria or yeast aids in amplification of human decorin nucleic acid. Nothing in the specification contemplates this method step. Further, in the alternate reading of the claims, wherein bacteria or yeast is used to amplify nucleic acids for use in nuclear transfer, nothing in the specification explicitly or implicitly teaches that this step is used to arrive at the claimed invention. As such, this issue is also new matter.

Claims 10, 14-17, 19, 26 remain rejected in modified form under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for

1. a method of making milk comprising recombinant decorin obtained from a transgenic mammal comprised of an expression cassette of a mammary gland promoter operably linked a nucleotide sequence encoding decorin from any species of animal stably integrated in its genome, wherein recombinant decorin is expressed in milk, and wherein recombinant decorin

2. a mammal comprising an expression cassette of a mammary gland promoter operably linked to a nucleotide sequence encoding decorin from any species of animal stably integrated in its genome, wherein recombinant decorin protein is expressed in milk,

3. a bacteria comprising an expression construct comprising a nucleic acid sequence encoding any decorin,

does not reasonably provide enablement for

1. a method of making any preparation of recombinant decorin from any species of animal from the milk of any non-human mammal comprising:

providing any non-human mammal, which includes any transgene which directs the expression of decorin anywhere in the animal,

allowing the transgene to be expressed in the non-human mammal, and

recovering any preparation of transgenically produced decorin from the non-human mammal or from any product produced by the non-human mammal,

2. the method of making any preparation of recombinant decorin from any species of animal from the milk of any non-human mammal comprising:

providing any non-human mammal, which includes any transgene which directs the expression of decorin anywhere in the animal,

allowing the transgene to be expressed in the non-human mammal, and

recovering any preparation of transgenically produced decorin from the non-human mammal or from any product produced by the non-human mammal,

further comprising using a vector useful in the amplification of a recombinant decorin nucleic acid sequence, wherein the nucleic acid encoding decorin is used in a nuclear transfer process to develop a non-human transgenic mammal.

and

3. a transgenic non-human multicellular organism comprising any transgene construct comprising a nucleic acid sequence encoding decorin from any species of animal operably linked to any promoter, wherein decorin is expressed in anywhere in the organism, and wherein any preparation of transgenically produced decorin is obtained from any product produced by the transgenic non-human organism,

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims for reasons of record, February 10, 2005 and October 20, 2005. Response to Applicant's argument is provided following this new ground of rejection.

With regard to claim 26 being amended to include embodiments drawn to using a vector in a nuclear transfer process the art teaches that nuclear transfer is not routine in the art.

Claim 26 is broadly drawn to cloning of any non-human mammal. However, the state of the art for production of any non-human mammal is not found to be predictable. Oback and Wells, 2002, Cloning and Stem Cells, 4: 147-168 review the state of the art for donor cells used in cloning and state, "currently, we do not know what makes a good donor cell. In mammals, more than 200 distinct cell types are plainly distinguishable by morphology and more will probably be discovered when better molecular markers become available. Less than 5% of these have been tested as nuclear donors, and they all support development to blastocysts; however, many repeatedly failed to generate viable offspring (Oback and Wells, page 147, 2nd col., 1st parag.)." Oback and

Wells further support the lack of teachings provided in the art with regard to donor cells that predictably result in live offspring by showing that in different animal species, different somatic donor cells have been tested with varying results. For example, Wakayama and Yanagimachi tested eight cell types in nuclear transfer (NT) methodology in mice, and found that live offspring were obtained from fibroblast, undefined fetal gonadal and cumulus cells. Further, Kato et al. tested somatic donor cells in cattle and found that all supported development to blastocysts but live offspring were obtained from cumulus, oviduct, skin and liver cells (Oback and Wells, pages 155-156). Further, Oback and Wells teach that deciding which cell to use as a donor cell in NT methods is not clear because the cells that have worked in certain species are not the same cells that work in other species, and that they are often dissimilar in their cell cycle stage and their cloning competence. Oback and Wells provide a summary of cloning efficiencies from various somatic donor cells (see Table 1). It is noted that different cell types provide different cloning efficiencies with regard to different animal species. Thus, when taken with the specification's lack of teachings or guidance to enable the full breadth of the claimed invention (of any somatic cell donor) and the state of the art's clear teaching of the unpredictability of using any somatic cell as a donor in NT methodology, and the unpredictability amongst species of animals in using different somatic cells, an artisan could not reasonably arrive at the claimed invention.

The unpredictability in the NT art is further supported by the post-filing art of Campbell et al., 2005, Reprod. Dom. Anim.,40: 256-268. Campbell et al. review the state of the art of NT, and particularly, with regard to the choice of a particular, suitable

donor cell, they teach that although different cultured cells, as well as some somatic cells can be used in NT, there are varying results using these cell types, and they state that, "unfortunately no conclusion can be made on what is the most appropriate cell type for SCNT (Campbell et al., page 261, see under, Selection and culture of a suitable donor cell)." Tian et al. 2003, Reprod. Bio. & Endocrin., 98: 1-7, also support the unpredictability in selection of an appropriate donor cell, they teach that somatic cells have varying cloning competence and that although specific cell types have found to be successful in producing cloned animals, "A clear consensus, however, has not been reached as to the superior somatic cell type for nuclear transfer." They compared various donor cell types from the same donor animal and conclude that the donor cell type can significantly affect embryo development, both *in vitro* and *in vivo* (Tian et al, pages 3-4, under, Cloning competence of various somatic cell types). Thus, specific guidance must be provided to enable the claimed invention in view of the unpredictable state of the art with regard to NT in general, and specifically, for the specific donor cell used. For example, Li et al., 2003, Reprod. Bio. & Endocrin., 84: 1-6, state that, "overall efficiency of nuclear transfer is still very low and several hurdles remain before the power of this technique is harnessed. Among these hurdles include an incomplete understanding of biologic processes that control epigenetic reprogramming of the donor genome following nuclear transfer. Incomplete epigenetic reprogramming is considered the major cause of the developmental failure of cloned embryos and is frequently associated with the disregulation of specific genes. At present, little is known about the developmental mechanism of reconstructed embryos. Therefore, screening strategies

to design nuclear transfer protocols that will mimic the epigenetic remodeling occurring in normal embryos and identifying molecular parameters that can assess the developmental potential of pre-implantation embryos are becoming increasing important (Li et al., abstract)." Li et al. further state that, "The factors involved in the success of NT are very complex. Although many protocols have been modified and utilized in the NT processes, some events continue to remain ill-defined (Li et al., page 1, 2nd col., parag. under Progress in Nuclear Transfer)." This further supports the unpredictability in the art - if it would be routine experimentation to produce cloned animals, then one could expect that any donor cell could be successfully used to produce any species of animal. Such has not been found to be the case. Li et al. teach, "the low efficiency and abnormal development of cloned animals are mainly due to incomplete reprogramming and abnormal gene expression." Li et al., page 2, 1st col., 2nd full parag. Li et al. further state, "most cloned embryos have been observed to fail to develop to term, and some of the surviving cloned animals have shown abnormalities. The major cause may reside in faulty or incomplete epigenetic reprogramming of the donor nucleus, which affects the gene expression needed for every developmental stage of cloned embryos and offspring. Most cloned embryos lose their developmental abilities during pre-implantation and gastrulation. Moreover, the surviving adults often show abnormalities (Li et al., page 2, col. 1-2, bridging parag.)." McEvoy et al., 2003, Reprod. Supp., 61:167-182 support this unpredictability, citing that the production of NT-derived ruminants is an inefficient process that generally fails to generate viable offspring. They suggest that after NT, fetal losses are due to significant developmental retardation and

placental inadequacies, and state the following, "Indeed, the fact that losses can occur at all stages and in various guises, ranging from gross degeneration of preimplantation embryos to sudden post-natal death of apparently normal offspring, confirms that NT procedures are frequently responsible for fundamental and far-reaching disruption of developmental norms. Intuitively, it could hardly be otherwise, given that the reconstructed egg comprises a severely traumatized host cytoplasm fused to a donor cell (or nucleus) with which, to a greater or lesser extent, depending on its origin, it is virtually incompatible from the outset. Therefore, the more remarkable phenomenon is that, against the odds, NT sometimes results in the generation of viable offspring (McEvoy et al., emphasis added, page 173, 2nd and 3rd parags. under Nuclear Transfer Technology)." Therefore, NT transfer is clearly not a method that only requires routine experimentation in order to practice, but a complex method that is unpredictable at various stages, as evidenced by the cited art.

For these reasons, the specification does not provide guidance for an artisan to practice the claimed invention.

Response to Arguments

Applicant's arguments filed April 20, 2006 have been fully considered and they are persuasive in part.

Applicant has indicated that the specification is enabling for the broader spectrum of mammalian species (Applicant's response, page 6, 1st parag. under "Claims 10, 14-19, 25"). Applicant point out that the current invention is a bioreactor (Applicant's

response, page 7, 5th parag.). In response, the Examiner finds the Applicant's argument that the specification and art are enabling for the scope of non-human mammals as bioreactors and this aspect of the rejection is withdrawn. It is noted that Applicant indicates that "how different would the specification have been if the human protein secreted had been collected from a transgenic goat as the result of the action of mouse promoter turned on during normal lactation (Applicant's response, page 6, 1st parag. under "Claims 10, 14-19, 25"). As such, because non-human mammal, of which goat is encompassed, is enabling, the limitation of goat, claim 15, has been rejected below in the 103. Note that the scope of enablement, above, has been modified to reflect this change.

However, with regard to the claims being broadly drawn to any transgene which directs the expression of decorin (e.g. see claim 10), the rejection is maintained. While the art and specification provide guidance to arrive at a mammary gland promoter, wherein the mammary gland promoter has activity in transgenic mammals, the art and specification do not provide guidance for the broad scope of other promoters that work in transgenic mammals. Further, the specification and the art do not provide guidance, wherein upon expression of the transgene of interest in non-mammary tissue, the protein translated from the transgene makes its way into the milk of the transgenic mammal (Office Action, October 20, 2005, pages 12-14). With regard to this issue, the rejection is maintained.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 26 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Response to Arguments

Applicant's arguments filed February 28, 2006 have been fully considered but they are not persuasive.

While Applicant has amended claim 26, the amendment to the claims does not overcome the problem that "vector" can be read as a term used in parasitology for various pathogens and the claims still reads as though bacteria or yeast is administered to the transgenic non-human mammal in a process of amplifying nucleic acid sequences. As such, the rejection as it applies to this issue remains.

With regard to the rejection of claim 26 to the word, "decoring," Applicant amended the word to "decorin." The rejection as it applies to this issue is withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 19 remains rejected under 35 U.S.C. 102(b) as being anticipated by Hering et al., 1996, Analytical Biochemistry, 240: 98-108, for reasons of record, October 20, 2005.

Response to Arguments

Applicant's arguments filed February 28, 2006 have been fully considered but they are not persuasive.

Applicant indicates that Hering et al. do not anticipate claim 19. This is because Herin et al. teaches the production of "bovine decorin" and not human decorin in "bacterial cells" and not the mammary gland of a whole animal. The scientific tools needed to generate an in vitro colony of prokaryotes as opposed to the production of a sexually mature transgenic mammal are VASTLY different (Applicant's emphasis, Applicant's response, page 10, 1st parag.). Applicant indicates that claim 19 recites (including limitations from its supravening base claim) several elements not present or suggested in any of the teachings of Hering et al. including:

a) Non-human transgenic mammals- not prokaryotes not in vitro,

b) Recombinant human decorin- not bovine decorin with a variant amino acid structure and sequence,

c) production in milk- an impossibility with a single-celled organism.

None of these elements, a-c, are disclosed in the Hering et al. reference. In response, while Applicant indicates that claim 19 recites (including limitations from its supravening base claim), this is not correct. Claim 19 is an independent claim and it is simply drawn

to any transgenic non-human organism that expresses any transgenic decorin. The Examiner has looked at the specification to determine if Applicant had defined "organism." According to The American Heritage Dictionary of the English Language, Fourth Edition [online], 2000 [retrieved on 2006-06-20]. Retrieved from the Internet:<http://dictionary.reference.com/browse/organism>, pages 1-3, see first entry, organism is defined as:

1. An individual form of life, such as a plant, animal, bacterium, protist, or fungus; a body made up of organs, organelles, or other parts that work together to carry on the various processes of life.

2. A system regarded as analogous in its structure or functions to a living body: *the social organism.*

With regard to definition 1, organism would encompass the transgenic bacteria comprising an expression construct comprising a nucleic acid sequence encoding decorin. With regard to the decorin in Hering et al. being bovine, nothing in claim 19 has the limitation that the decorin is from human or cow. As such, Hering et al. anticipate claim 19 and the rejection remains.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10, 14-19, 25 remain rejected in modified form under 35 U.S.C. 103(a) as being unpatentable over Houdebine et al, U.S. Patent 5,965,788, patented October 12, 1999, previously presented, in view of Isaka et al., 1996, Nature Medicine, 2: 418-423, see IDS and Roberts et al., 1992, Gene, 121: 255-262, previously presented.

Houdebine et al. teach a method of preparing a protein of interest in the milk of a transgenic mammal. Houdebine et al. teach that the milk-expressed transgenic protein is abundant in supply and tends to be properly post-translationally modified. In this method, Houdebine et al. teach that a transgenic construct, pW3, comprising the promoter of the rabbit WAP gene operably linked to the nucleic acid sequence encoding human growth hormone (Houdebine et al., col. 6, lines 56-58) and the transgenic construct, pJ4, comprising the promoter of the rabbit WAP gene operably linked to nucleic acid sequence encoding bovine growth hormone (Houdebine et al., col., 6, line 66-col. 7, line 2) were injected into the male pronucleus of mouse embryos (Houdebine et al., col., 7, lines 16-18). Transgenic mice were evaluated for the presence of the transgene by Southern blotting and by evaluating the concentrations of growth hormone in the blood and milk via specific radioimmunological assays (Houdebine et al., col. 7, lines 25-30). Houdebine et al. teach that by specific radioimmunological tests, mice comprised of the pW3 construct produced 10-21 mg/ml of human growth hormone. Mice comprised of the pJ4 construct produced from 5-17 mg/ml of bovine growth hormone.

While Houdebine et al. teach that human and bovine growth hormone were expressed at high levels in mice, they do not teach that decorin was expressed, nor do they teach the promoter of beta-casein.

Isaka et al. teach that the proteoglycan decorin is a known inhibitor of TGF-beta1 and that evidence teaches that inhibitors of TGF-beta1 are clinically useful as antifibrotic agents in fibrotic disease caused by TGF-beta1 overexpression (Isaka et al., abstract). Isaka et al. also teach that decorin would be more suitable for clinical use than antibodies. Isaka et al. also teach that injection of recombinant decorin into glomerulonephritic rats was as effective as anti-TGF-beta 1 antibodies in suppressing TGF-beta-induced matrix accumulation in nephritic glomeruli. However, the limited availability of recombinant decorin has been a serious obstacle to further development of this promising therapy. In their study, Isaka et al. teach that rats were injected in the muscle with a plasmid expression construct comprising a nucleic acid sequence encoding decorin. While decorin was detected in the muscle, kidney, liver, and lungs, no decorin was expressed in the plasma. Isaka et al. teach that this result was anticipated because of the short half-life of circulating decorin (Isaka et al., page 419, 2nd col., parag. under "Gene transfer into normal rats").

Roberts et al. teach that the goat beta-casein gene encodes the most abundant protein of goat milk (Roberts et al., abstract, line 1). Roberts et al. teach the sequence of goat-beta casein gene. Roberts et al. teach that transgenic mice comprising the 18.5 kb fragment containing the entire goat beta-casein gene were made.

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute the nucleic acid sequence encoding decorin with the nucleic acid sequence encoding growth hormone in the method taught by Houdebine et al. It would have also been obvious to substitute the WAP promoter with the beta-casein promoter in the method taught by Houdebine et al.

One having ordinary skill in the art would have been motivated to substitute the promoter and the nucleic acid sequence encoding decorin, one for the other, in order to obtain a transgenic mammal that expressed decorin in the mammary gland. Motivation to use the system described by Houdebine et al. was provided by the fact that Houdebine et al. teach that expressing recombinant protein in milk resulted in recombinant protein that was expressed in large amounts. Motivation to make decorin was provided by the fact that Isaka et al. teach that recombinant decorin has been difficult to make and that recombinant decorin has therapeutic effects. One would have wanted to make large amounts of therapeutic proteins. Motivation to use the beta-casein promoter was provided by Roberts et al. who teach that beta-casein is the most abundantly produced protein in milk. One would have wanted to use a promoter that expresses at high levels.

There would have been a reasonable expectation of success of expressing large amounts of recombinant decorin given the results of Houdebine et al. for teaching a system that expressed high levels of recombinant protein in milk and Roberts et al. for teaching that the goat beta-casein promoter expressed proteins at high levels.

Conclusion

No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joanne Hama, Ph.D. whose telephone number is 571-272-2911. The examiner can normally be reached Monday through Thursday and alternate Fridays from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, Ph.D. can be reached on 571-272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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JH

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PRIMARY EXAMINER